



RE: Haystead 9 SWD

Timothy J. Brock

to:

Timothy Elkins

05/21/2012 01:47 PM

Cc:

"Tim Baker", "Ann Baker"

Hide Details

From: "Timothy J. Brock" <brock.engineering@yahoo.com>

To: Timothy Elkins/R5/USEPA/US@EPA,

Cc: "Tim Baker" <timb46@hotmail.com>, "Ann Baker" <anni@wbeco.net>

History: This message has been replied to.

3 Attachments



Haystead 1-9A HD1 WBD.pdf Haystead 1-9 CMCS Cementing Records.pdf



Haystead 1-9A Halliburton Long String Cementing.pdf

Tim,

Please find attached the cementing records from Central Michigan Cementing Service for the Haystead 1-9, which was the original wellbore prior to being sidetracked to the Haystead 1-9A. The 11-3/4" and 8-5/8" casings were cemented by CMCS. The Haystead 1-9A was cemented by Halliburton Services and I have been unable to find the company's cementing record (field ticket) for this string. However, I have attached a copy of the invoice proving that the cement job was pumped. Further, as a registered professional engineer, I certify that the Flowstop has a yield of 1.49 cuft/sx and weighs 14.5 ppg. This stage was pumped as the first stage of this multi-stage cement job (below the DV tool). The Halcem was pumped as the second stage of the cement job and is Halliburton's tradename for Class A cement. It has a yield of 1.18 cuft/sx and a density of 15.8 ppg. Therefore, the slurry volume below the DV tool was 149 cuft and the volume above it was 236 cuft. The top of cement behind the 5-1/2" production casing in the Haystead 1-9A was logged at 3,134' with a cement bond log. I have attached a wellbore diagram for your consideration and review. Please contact me immediately if you have any further questions.

Timothy J. Brock

State of Michigan Registered Professional Engineer #39603

Brock Engineering, LLC

771 N West Silver Lake Rd.

Traverse City, MI 49685

Phone: (231) 421-3001

Fax: (231) 421-3033

Cell: (517) 242-6688

From: Timothy Elkins [<mailto:Elkins.Timothy@epamail.epa.gov>]

Sent: Wednesday, May 09, 2012 12:43 PM

To: brock.engineering@yahoo.com

Subject: Haystead 9 SWD

Hi Mr. Brock,

I previously indicated that I had anticipated that the Haystead 9 SWD injection well permit would be drafted and on public notice soon, however I cannot receive management sign off without reviewing the information requested

in my letter to you dated February 10, 2012. To date I have not received documentation which clearly indicates the **slurry volume** of Flowstop and HalCem cement used in the cementing of the Haystead 1-9A casings. Mr. Baker has provided cementing tickets, however the slurry volumes are not documented. Unfortunately, I am not familiar with these cements and cannot properly assess the construction and plugging of the Haystead 1-9A casing without proper documentation. Please review item number 2 in the attached letter and feel free to contact me if you have further questions.

Thank you.

Timothy M. Elkins
US EPA Region 5
Underground Injection Control
77 W. Jackson Blvd., WU-16J
Chicago, IL 60604
Phone: 312-886-0263

Wellbore Sketch

Well: **HAYSTEAD 1-9A HD1** KB: **967.3** Permit#: **60310**
 Operator: **WEST BAY EXPLORATION COMPANY** GL: **954** PrePerm _____
 Surf. Loc.: **NE** /Q **NW** /Q **SW** /Q Sec. **9** T **4S** R **2E**
 Btm Hole Loc.: **NW** /Q **SE** /Q **NE** /Q Sec. **8** T **4S** R **2E**

CONDUCTOR

16 " SA **32** ft
 DRIVEN

Notes:

HAYSTEAD 1-9A IS REDRILL
OF HAYSTEAD 1-9
1-9A KOP = 3375'
5-1/2" CMT RETNR SA 4400'
SQZ W/ 100 SX CLASS A
5-1/2" CIBP SA 4300'
WHIPSTOCK SET ON CIBP
4-3/4" Open hole compl.

Perforations:

4502	to	4512	6/24/2010
4412	to	4430	6/25/2010
	to		
	to		
	to		

Orig.TD: **4589**
 PBTD: **5585**
 TD: **5585**

SURFACE

11.75 " SA **425** ft
 Grd: **H-40** **42** lb/ft **ST&C** threads

Cmt: **Lead: 175 SX 65/35 POZ W/ 6% GEL AND 3% CaCl2; TAIL: 150 SX CLASS A W/ 3% CaCl2 CIRC 40 BBL TO SURFACE**

Top of Cement **SURFACE** ft

	SX	YLD	HOLE	VOL, cuft	TheoFILL	EST. TOC
LEAD	175	1.69	14.8	295.75	682	-257
TAIL	150	1.18	14.8	177	408	-665

	BBL	YLD	SX
Sx CTS	40	1.69	133

INTERMEDIATE

8.625 " SA **3340** ft
 Grd: **J-55** **32** lb/ft **ST&C** threads

Cmt: **LEAD: 600 SX 65/35 POZ W/ 6% GEL AND 2% CaCl2; TAIL: 200 SX CLASS A W/ 3% CaCl2 CIRC 40 BBL TO SURFACE**

Top of Cement **SURFACE** ft

	SX	YLD	HOLE	VOL, cuft	Theo.FILL	EST. TOC
LEAD	600	1.69	10.6	1014	4829	-1489
TAIL	200	1.18	10.6	236	1124	-2613

	BBL	YLD	SX
Sx CTS	40	1.69	133

PRODUCTION

5.5 " SA **4572** ft
 Grd: **J-55** **15.5** lb/ft **LT&C** threads

Cmt: **1)100 SX FLO-STOP, 2) 200 SX HALCEM (CLASS A)**

Top of Cement **3134** ft
(BOND LOG)

	SX	YLD	HOLE	Base VOL, cuft	Theo.FILL	EST. TOC
Stg 1	100	1.49	7.88	4572	149	860
Stg 2	200	1.18	7.88	4281	236	1362

	BBL	YLD	SX
Sx CTS	6	1.49	22.6

(from first stage)



Central Michigan Cementing Services

1934 Commercial Drive • Mt. Pleasant, MI USA 48858

Phone: 989/775-0940 • Fax: 989/775-0943

midstatetools@msn.com

PRIMARY CEMENTING REQUIREMENTS

Company West Bay Exploration Date 5-20-10 Job # _____

Well Name Haystead No. 1-9

County Jackson Section 9 4s 2e State MI

Contractor Birdie Barnett

Job Description 11 3/4 Surface CSS

Casing Size 11 3/4 Lbs/Ft. 42 # Casing TD 430

Insert Type None LV 30' in pipe Insert TD 398

Open Hole Size 14 3/4 From 32 To 425 TD

Annular Casing Size 16" To 32' Lbs/FT 55

JOB REQUIREMENTS:

Annular Volume Casing 32 Ft. x .5364 Cu/Ft = 17.2 Cu Ft.

Annular Volume O.H. 398 Ft. x .4336 Cu/Ft = 172.6 Cu Ft.

Excess 160 % of open hole % = _____ Cu Ft.

Total Cubic Foot Needed for Job = 472.75 Cu Ft.

Lead Cement Type 65/35/6 3% Cack

Sacks of Cement 113.8 Type A x (94 Lbs.) = 10697.2

Sacks of Ash 61.2 x (94 Lbs.) = 4284

Sacks of Bentonite 9 x (100 Lbs.) = 900

Sacks of Cal Chl. 9 x (50 Lbs.) = 450

Lead Cement Yield 1.69 x 175 Total Sacks = 295.75 Cu Ft.

Tail Cement Type Class A 3% Cack

Sacks of Cement 150 Type Type E x (94 Lbs.) = 14100

Sacks of Calcium Chloride 9 x (50 Lbs.) = 450

Tail Cement Yield 1.18 x 150 Total Sacks = ~~150~~ 177 Cu Ft.

Type of Pre Flush Fresh Water Total BBLS 30

Mix Water Req. Lead Cement = 34.2 BBLS Tail Cement = 18.6 BBLS

Displace Water Used Fresh Water 47.5 BBLS Total BBLS Required 130.3

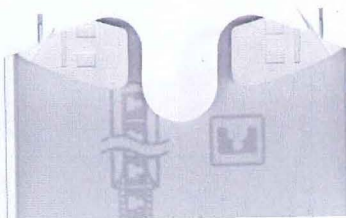
Was Wiper Plug Run No stop cut at 398' Cement Returned to Surface 40 BBLS

Time and Date When Landed Plug 10:00 pm 5-20-10

Comments _____

40 BBL To pits Cement stayed in place

Cementor Bill Russell Operator Matt P. Loney





Central Michigan Cementing Services

1934 Commercial Drive • Mt. Pleasant, MI USA 48858

Phone: 989/775-0940 • Fax: 989/775-0943

midstatetools@msn.com

PRIMARY CEMENTING REQUIREMENTS

Company West Bay Exploration Date 5-26-10 Job # _____

Well Name Haystead No. 1-9

County Jackson Section 9 4s 2e State MI

Contractor Birdie Burnett

Job Description 8 5/8 Intermediate Csg

Casing Size 8 5/8 Lbs/Ft. 32 Casing TD 3340

Insert Type Auto Fill Insert TD 3300

Open Hole Size 10 5/8 From 425 To 3340 TD

Annular Casing Size 11 3/4 To 425 Lbs/FT 42*

JOB REQUIREMENTS:

Annular Volume Casing 425 Ft. x 0.2643 Cu/Ft = 112.3 Cu Ft.

Annular Volume O.H. 2915 Ft. x 0.2100 Cu/Ft = 612.2 Cu Ft.

Excess 80% of open hole % = _____ Cu Ft.

Total Cubic Foot Needed for Job = 1250 Cu Ft.

Lead Cement Type 45/35/6 + 2% Cocl₂

Sacks of Cement 390 Type Class A x (94 Lbs.) = 36660

Sacks of Ash 210 x 70 (85) Lbs. = 14700

Sacks of Bentonite 31 x (100 Lbs.) = 3100

Sacks of Cal Chl. 22 x (50 Lbs.) = 1100

Lead Cement Yield 1.69 x 600 Total Sacks = 1014 Cu Ft.

Tail Cement Type Class A 3% Cocl₂

Sacks of Cement 200 Type Class A x (94 Lbs.) = 18800

Sacks of Calcium Chloride 12 x (50 Lbs.) = 600

Tail Cement Yield 1.18 x 200 Total Sacks = 236 Cu Ft.

Type of Pre Flush Fresh Water Total BBLS 20

Mix Water Req. Lead Cement = 117.2 BBLS Tail Cement = 24.8 BBLS

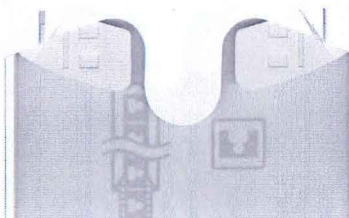
Displace Water Used 67 Brine 201 gal BBLS Total BBLS Required 363

Was Wiper Plug Run Yes Cement Returned to Surface _____ BBLS

Time and Date When Landed Plug 4:00 pm 5-26-10

Comments _____

Cementor Bill Russell Operator Justin K Matt P Brett F.



INVOICE

<h2 style="margin: 0;">HALLIBURTON</h2> <p style="margin: 0; font-size: small;">Halliburton Energy Services, Inc.</p> <p style="margin: 0;">Remit To: P.O. Box 203143, Houston, TX 77216-3143</p>				<p style="margin: 0; text-align: center;">Wire Transfer Information</p> <p style="margin: 0; text-align: center;">Account Number: Account 00032969</p> <p style="margin: 0; text-align: center;">ABA Routing No.021000089</p> <p style="margin: 0; text-align: center;">ABA Routing Number:</p>			
<p style="margin: 0;">Invoice Date: June 15, 2010</p>				<p style="margin: 0;">Invoice Number: 96973289</p>			
<p style="margin: 0;">DIRECT CORRESPONDENCE TO:</p> <p style="margin: 0;">301 Lucerne Road</p> <p style="margin: 0;">HOMER CITY, PA 15748</p> <p style="margin: 0;">US</p> <p style="margin: 0;">Tel: (888) 223-4255</p> <p style="margin: 0;">Fax: (724) 479-3592</p>				<p style="margin: 0;">Rig Name:</p> <p style="margin: 0;">Well Name: WEST BAY HAYSTEAD 1 9 J JACKSON</p> <p style="margin: 0;">Ship to: JACKSON, MI 49201</p> <p style="margin: 0;">JACKSON</p> <p style="margin: 0;">Job Date: June 07, 2010</p> <p style="margin: 0;">Cust. PO No.: NA</p> <p style="margin: 0;">Payment Terms: Net 20 days from Invoice date</p> <p style="margin: 0;">Quote No.:</p> <p style="margin: 0;">Sales Order No.: 7419648</p> <p style="margin: 0;">Manual Ticket No.:</p> <p style="margin: 0;">Shipping Point: KALKASKA Shipping Point</p> <p style="margin: 0;">Ultimate Destination Country: US</p> <p style="margin: 0;">Customer Account No.: 306427</p>			
<p style="margin: 0;">TO:</p> <p style="margin: 0;">WEST BAY EXPLORATION CO</p> <p style="margin: 0;">13685 S WEST BAY SHORE, STE 200</p> <p style="margin: 0;">TRAVERSE CITY MI 49684</p>				<p style="margin: 0;">Contract No.:</p> <p style="margin: 0;">Contract from:</p> <p style="margin: 0;">Contract to:</p>			

Material	Description	QTY	UOM	Base Amount	Unit Amount	Gross Amount	Discount	Net Amount
392189	CMT MULTIPLE STAGES BOM	1.00	JOB					
404249	Cmt Equipment & Pump Charge, C	1.00	EA					
	Cmt Equipment & Pump Charge, CMT							
452962	FLOWSTOP (TM) SYSTEM	100.00	SK					
452986	HALCEM (TM) SYSTEM	200.00	SK					
100001585	KCL POTASSIUM CHLORIDE	250.000	LB					
100063955	FLO-CHEK P	800.000	LB					
	CHEMICAL - FLO-CHEK P - 100#							
	FIBER / DRUM							
76400	ZI MILEAGE,CMT MTLS DEL/RET MI	195.000	MI					
	500-306 / MILEAGE,CMTG MTLS							
	DEL/RET PER/TON MI.MIN							
	NUMBER OF TONS	14.77	ton					
3965	HANDLE&DUMP SVC CHRQ, CMT&ADDI	330.000	CF					
	500-207							
	NUMBER OF EACH	1	each					
404249	MSC Tool Operator	1.00	EA					
	Cmt Equipment & Pump Charge, CMT							
372867	Cmt PSL - DOT Vehicle Charge,	3.000	EA					
	Cmt PSL - DOT Vehicle Charge, CMT							
100004672	PLUG SET - FREE FALL - 5-1/2 8	1.000	EA					
	PLUG SET, FREE FALL, 5 1/2 8RD,							
	& / BUTTRESS 13-23 LBS 2-STAGE							
	CEMENTER, / WITH 2.87 ID BAFFLE							
100005045	KIT,HALL WELD-A	3.000	EA					

1.49 F13/SX

1.18 F13/SX

INVOICE

Continuation

HALLIBURTON

Halliburton Energy Services, Inc.

Remit To: P.O. Box 203143, Houston, TX 77216-3143

Invoice Date: June 15, 2010

Invoice Number: 96973289

Material	Description	QTY	UOM	Base Amount	Unit Amount	Gross Amount	Discount	Net Amount
100004685	CMTR, TY P ES, 5-1/2 8RD 14-17LB CEMENTER, TYPE P ES, 5-1/2 8RD 14-17 / LBS/FT, SUITABLE FOR USE WITH K-55	1,000	EA					
100004895	SHOE, FLOAT, 5 1/2 8RD, 2 3/4 SUP SHOE, FLOAT, 5-1/2 8RD, K-55, 2-3/4 / SUPER SEAL II VALVE	1,000	EA					
	Taxable							
	Non-Taxable							
	Total							
	INVOICE TOTAL							
<p>Payment Terms: If Customer does not have an approved open account with Halliburton, all sums are payable in cash at the time of performance of services or delivery of equipment, products, or materials. If Customer has an approved open account, invoices are payable based upon the payment terms stated on this invoice or as otherwise stated in the applicable Halliburton contract governing performance or delivery. Customer agrees to pay interest on any unpaid balance from the date payable until paid at the highest lawful contract rate applicable. In the event Halliburton employs an attorney for collection of any amount, Customer agrees to pay all reasonable and necessary attorney fees to recover the unpaid amount, plus all collection and court costs.</p> <p>Edwin Garcia Phone: 972-418-3042 Cell: 972-983-8729</p>								



RE: Haystead 9 SWD

Timothy J. Brock

to:

Timothy Elkins

05/09/2012 01:39 PM

Cc:

"Ann Baker"

Hide Details

From: "Timothy J. Brock" <brock.engineering@yahoo.com>

To: Timothy Elkins/R5/USEPA/US@EPA,

Cc: "Ann Baker" <anni@wbeco.net>

Tim,

Thanks for your e-mail. I am getting a copy of the cementing records e-mailed to me and I will get you the information that you need as soon as possible.

Regards,

Tim Brock

Timothy J. Brock, PE
Brock Engineering, LLC
771 N West Silver Lake Rd.
Traverse City, MI 49685
Phone: (231) 421-3001
Fax: (231) 421-3033
Cell: (517) 242-6688

From: Timothy Elkins [mailto:Elkins.Timothy@epamail.epa.gov]

Sent: Wednesday, May 09, 2012 12:43 PM

To: brock.engineering@yahoo.com

Subject: Haystead 9 SWD

Hi Mr. Brock,

I previously indicated that I had anticipated that the Haystead 9 SWD injection well permit would be drafted and on public notice soon, however I cannot receive management sign off without reviewing the information requested in my letter to you dated February 10, 2012. To date I have not received documentation which clearly indicates the **slurry volume** of Flowstop and HalCem cement used in the cementing of the Haystead 1-9A casings. Mr. Baker has provided cementing tickets, however the slurry volumes are not documented. Unfortunately, I am not familiar with these cements and cannot properly access the construction and plugging of the Hatstead 1-9A casing without proper documentation. Please review item number 2 in the attached letter and feel free to contact me if you have further questions.

Thank you.

Timothy M. Elkins
US EPA Region 5
Underground Injection Control
77 W. Jackson Blvd., WU-16J
Chicago, IL 60604
Phone: 312-886-0263

West Bay Exploration company

13685 S. West Bay Shore / Suite 200
Traverse City, MI 49684
231-946-0200 / Fax: 231-946-8180

P.O. Box 1203
5555 N. Hogback Road
Fowlerville, MI 48836
517-223-4011 / Fax: 517-223-4020

April 9, 2012

Mr. Timothy Elkins
Underground Injection Control
US EPA -Region 5
77 West Jackson Blvd.
Chicago, IL 60604-3590

RE: USEPA File: WU - 16J
Proposed Haystead SWD #9

Dear Mr. Elkins:

Enclosed is the information requested regarding the cementing information for the Haystead 1-9 A, indicating that 100 sx of Flowstop, and 200 sx of HalCem was used in cementing the 5 ½" casing of the Haystead 1-9 A.

Also, please note, that Mr. Timothy Brock, Petroleum Engineer, is authorized on behalf of West Bay Exploration to sign any UIC application, as well as any other related UIC documentation for West Bay Exploration Company.

If you have any further questions, please contact Mr. Brock, or myself at 231-946-0200, or via e-mail.

Sincerely,



Timothy L. Baker
Vice President
Operations and Engineering
West Bay Exploration Company

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APR 16 2012

UIC BRANCH
EPA, REGION 5

**RECORD OF WELL DRILLING OR DEEPENING**

Required by authority of Part 615 Supervisor of Wells or Part 625 Mineral Wells, of Act 451 PA 1994, as amended. Non-submission and/or falsification of this information may result in fines and/or imprisonment.

Permit number/Deepening number
60106

(Submit 3 copies within 60 days of drilling completion.)

☒ Part 615 Oil/Gas Well ☐ Part 625 Mineral Well

Name and address of permittee

West Bay Exploration
13685 S. West Bay Shore Dr #200
Traverse City, MI 49684

Name and address of drilling contractor

McConnel & Scully
142 W. Main St.
Homer, MI 49254

Date drilling began

5/20/10

Date drilling completed

6/28/10

Total depth of well

Driller 4555md, 4317tvd

Formation at total depth

Black River Fm

Elevations

K.B. 967.26 ft. R.F. 966.26 ft. R.T. ft. Grd 966.26 ft

API number

21-075-60076-01-00

Well name and number

Haystead 1-9A

Surface location

NE 1/4 of NW 1/4 of SW 1/4 Section 9 T4S R2E

Township

Norvell

County

Jackson

Footages

North/South

East/West

2472 ft. from South line and 1212 ft. from West line of sec.

Directionally drilled (check one)

☒ Yes ☐ No

Previous permit numbers

none

Subsurface location (if directionally drilled)

SE 1/4 of SE 1/4 of NE 1/4 Section 8 T 4S R 2E

Township

Columbia

County

Jackson

Footages

North/South

East/West

ft. from line and ft. from line of sec.

Feet drilled - cable tools

from to

Feet drilled - rotary tools

from surf to 4589

Casing, Casing Liners and Cementing, Operating Strings**Water Fill Up (F.U.) or Lost Circulation (L.C.) (X)**

Size	Where set	Cement	T.O.C.	Ft. pulled	Formation	F.U.	L.C.	Depth	Amount
11 3/4	425'	175 Lite/150 A			Black River		x	4589m	unknown
8 5/8	3340	600 Lite/200 A							
5 1/2	4572	1 st 100 Flowstop							
		2 nd 200 HalCem							

Gross Pay Intervals**All Other Oil and Gas Shows Observed or Logged**

Formation	Oil or Gas	From	To	Formation	Oil or Gas	Depth	Where Observed (X)	Sam- ples	Odor	Pits	Mud Line	Gas Log	Fill Up
Trenton-BR	Oil	4400m	4589m										
Trenton-BR	Oil	4166tv	4348tv										
				not observed									

Depth Correction**Deviation Survey****Plugged Back**

Depth	Correction	Run at	Degrees	Yes	No	Depth

Mailed

Geophysical / Mechanical Logs (list each type run)

Brand	Log types	Logged intervals
Baker Atlas	CNL/Density/GR	surf-4555md

Notice: Report complete sample and formation record, coring record, and drill stem test information on reverse side.

CERTIFICATION "I state that I am authorized by said owner. This report was prepared under my supervision and direction. The facts stated herein are true, accurate and complete to the best of my knowledge."

Date	Name and title (print)	Signature
10/26/10	Trish Rising, Field Geologist	T Rising

Submit to: OFFICE OF GEOLOGICAL SURVEY,
MICHIGAN DEPT OF ENVIRONMENTAL QUALITY
PO BOX 30256, LANSING, MI 48909-7756

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APR 16 2012

UIC BRANCH
EPA, REGION 5

RECEIVED

APR 16 2012

UIC BRANCH
EPA, REGION 5

			Date of review
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Operations Office

OCT 27 2010

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EPA, REGION 5



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - OFFICE OF GEOLOGICAL SURVEY
CERTIFICATION OF CASING AND SEALING OF SURFACE HOLE

Required by authority of Part 615 Supervisor of Wells or
Part 625 Mineral Wells, of Act 451 PA 1994, as amended
Non-submission and/or falsification of this information
may result in fines and/or imprisonment

Township Norvell		County Jackson	Permit number 60106
Name and address of permittee West Bay Exploration 13685 S. West Bay Shore Dr #200 Traverse City, MI 49684			Well name Haystead 1-9A
Surface location NE 1/4 of NW 1/4 of SW1/4 Section 9 T4S R2E			Name and address of drilling contractor McConnel & Scully 142 W. Main St Homer, MI 49254

SURFACE HOLE

Hole diameter (Note reductions)	Depth to bedrock	Base of specified aquifer (see permit)	Total depth of surface hole	Formation at surface casing seat	Date drilling completed
14 3/4	88	Marshall	425	Coldwater Shale	6/28/10
Narrative of unusual drilling circumstances or problems encountered none					
Name and address of geologist/mud logger Trish Rising, Field Geologist West Bay Exploration 12180 Ladd Rd Brooklyn, MI 49230					
Signature <i>T. Rising</i>			Date 10 26 10		

SURFACE CASING

Casing O.D. (in)	Casing depth	Cement type and additives	Amount of cement (sacks)	Volume (bbls)		Plug down date & time
				Pumped	Returned to surface	
11 3/4	425	Lite	175	47.5	40	5/21/10 10pm
		class A	150			
Narrative of problems encountered running or cementing casing. Note any cement fallback, grouting, or lost circulation zones. none						

Operations Office

OCT 27 2010

Mailed

I AM RESPONSIBLE FOR THIS REPORT. THE INFORMATION IS COMPLETE AND CORRECT.

Signature of permittee or company officer <i>T. Rising</i>	Date 10 26 10
---------------------------------------------------------------	------------------

Submit the original and one copy, typewritten or legible printed, within 30 days after drilling is completed to:

OFFICE OF GEOLOGICAL SURVEY
MICHIGAN DEPT OF ENVIRONMENTAL QUALITY
PO BOX 30256
LANSING MI 48909-7756

RECEIVED

APR 16 2012

UIC BRANCH
EPA, REGION 5



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

FEB 10 2012

REPLY TO THE ATTENTION OF:
WU-16J

CERTIFIED MAIL 7009 1680 0000 7644 1025
RETURN RECEIPT REQUESTED

Timothy Brock
West Bay Exploration Company
13685 South West Bay Shore Drive, Suite 200
Traverse City, Michigan 49684

Re: Additional Information Requested for the Haystead SWD #9 injection well, U.S. Environmental Protection Agency (EPA) Underground Injection Control (UIC) Permit Application #MI-075-2D-0010

Dear Mr. Brock,

I have reviewed your permit application for the injection well referenced above. At this time I am unable to complete the processing of the permit application in the absence of the information listed below:

1. A letter from West Bay Exploration Company which authorizes Timothy Brock to sign UIC applications and other related UIC documents.
2. Cementing tickets or similar documentation which indicates the slurry volume of Flowstop and HalCem cement used in the cementing of Haystead 1-9A casings (well in the area of review).
3. In accordance with 40 CFR § 144.4 (c), the U. S. Environmental Protection Agency (EPA) is required to comply with the Endangered Species Act (ESA) when issuing permit decisions. Therefore, when considering a permit application or extension, the UIC Branch must consider the potential impacts from the new or existing injection well to endangered species present in the area. In order to determine whether an injection well will adversely impact endangered and threatened species, the UIC branch must have location-specific ecological information, such as the presence of certain vegetation, soils or surface water bodies. As a result, we are requiring the following information to be submitted in each permit application.
 - a. A list of endangered, threatened, and candidate species in the county in which the well is located. Species are listed by state and county at <http://www.fws.gov/midwest/endangered/section7/sppranges/index.html>. Generally, two or three species are listed in each county (see enclosed example).

- b. A summary of the critical habitat which, if present, may support one of the above-listed species. The web address above includes a brief description of the critical habitat for each species. More detailed information on critical habitat is found at <http://www.fws.gov/midwest/endangered/section7/s7process/lifehistory.html>.
- c. A survey of the surface vegetation, soils, topography and hydrologic features in the area of review in sufficient detail to address the presence or absence of critical habitat for any endangered, threatened, or candidate species. This will include descriptions such as "mature mixed forest", "plowed field" or "stabilized dunes", and may also include specific trees or plants listed as critical to a species.
- d. A description of the "action area" for the well and associated surface facilities. This will include dimensions of the affected area, such as the clearing in which the well is located, length of road or pipeline to be built, etc., as well as the extent of disruption of the area. For example, an existing well with no construction plan will be less disruptive than a proposed well, and a proposed well in an open, plowed field will be less disruptive than one which requires some clearing of forest.

This information must be certified in accordance with 40 CFR § 144.32(d). EPA recommends that this information be gathered in consultation with an ecologist, botanist, or other environmental professional.

If critical habitat is present, the permit is not automatically denied. EPA, in conjunction with the U.S. Fish and Wildlife Service, will examine more detailed information to determine the presence of endangered species in the area and the likelihood of negative impact to the species. Past experience has shown that very few projects pose any disturbance to endangered species in Region 5, and we do not expect this to change. We appreciate your cooperation in protecting these important species from endangerment and extinction.

I will be unable to proceed with the processing of your application until this information is received. Please compile and submit the requested information upon your receipt of this letter. If you have any questions regarding the requested information, feel free to call me at (312) 886-0263.

Sincerely yours,

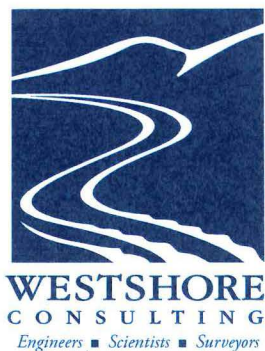
Timothy Elkins, Environmental Scientist
Underground Injection Control

Enclosure

cc: Rick Henderson, Michigan DEQ

JE 2/7/12

TE 2/7/12



March 19, 2012

RECEIVED

MAR 20 2012

UIC BRANCH
EPA, REGION 5

Mr. Timothy Elkins
Underground Injection Control
U.S. EPA – Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3590

WestshoreConsulting.com

Muskegon

2534 Black Creek Road
Muskegon, Michigan 49444
Ph: (231) 777-3447
Fx: (231) 773-3453

Grand Haven

(616) 844-1260

Manistee

(231) 920-5818

Re: *USEPA File: WU-16J*
Additional Information Requested for the Haystead SWD #9 Injection Well, Permit Application #MI-075-2D-0010

Dear Mr. Elkins:

This letter is in response to your *Additional Information Requested for the Haystead SWD #9 injection well* letter dated February 10, 2012 regarding West Bay Exploration Company's (West Bay) permit application referenced above (Appendix A). The Haystead SWD #9 injection well is located in Section 9, T4S, R2E, Norvell Township, Jackson County, Michigan (Figure 1). Following are responses to question number 3 outlined in your letter regarding whether the injection well will adversely impact endangered and threatened species.

- a. **A list of endangered, threatened, and candidate species in the county in which the well is located. Species are listed by state and county at <http://www.fws.gov/midwest/endangered/section7/sppranges/index.html>. Generally, two or three species are listed in each county.**

On February 20, 2012, Westshore Consulting (Westshore) consulted the U.S. Fish and Wildlife Service (USFWS) website, to determine whether the Section 7 list of Federally endangered, threatened, proposed and/or candidate species were located within the location of the proposed injection well. The results of the USFWS search for Jackson County, Michigan included the Indiana Bat (*Myotis sodalis*) and Mitchell's Satyr Butterfly (*Neonympha mitchellii mitchellii*) as listed endangered species, and the Eastern Massasauga (*Sistrurus catenatus*) and Poweshiek Skipperling (*Oarisma poweshiek*) as endangered or threatened candidate species (Appendix B).

- b. **A summary of the critical habitat which, if present, may support one of the above-listed species. The web address above includes a brief description of the critical habitat for each species. More detailed information on critical habitat is found at <http://www.fws.gov/midwest/endangered/section7/s7process/lifehistory.html>.**

Westshore evaluated the critical habitats necessary for the existence and propagation of the Indiana Bat (*Myotis sodalis*), Eastern Massasauga (*Sistrurus catenatus*), Mitchell's Satyr Butterfly (*Neonympha mitchellii mitchellii*), and Poweshiek Skipperling (*Oarisma poweshiek*).

- The Indiana Bat is dependent on well-developed riparian woods or woodlots located approximately 1 to 3 miles away from small to medium rivers and stream corridors (FWS, 2011).
 - The Eastern Massasauga is dependent on a variety of wetlands and adjacent upland woodlots. The Eastern Massasauga is known to occupy wetland sites during the winter and spring, but has been known to utilize dry, upland sites during summer and late fall (DNR, 2012).
 - The Mitchell's Satyr Butterfly is dependent on rare wetland fens with calcareous soils and natural carbonate-rich water seeps and springs (FWS, 2011).
 - The Poweshiek Skipperling is restricted to wet prairies and fen wetlands (FWS, 2011).
- c. **A survey of the surface vegetation, soils, topography and hydrologic features in the area of review in sufficient detail to address the presence or absence of critical habitat for any endangered, threatened, or candidate species. This will include descriptions such as "mature mixed forest", "plowed field" or "stabilized dunes", and may also include specific trees or plants listed as critical to a species.**

On February 23, 2012, Westshore conducted a regional and action area site assessment and survey of the Haystead SWD #9 project area. Mr. Eric R. Johnson, Wetland Scientist had full access to the action area and surrounding regional landscape for vegetation, soil, topographic and surface water evaluation and assessment. Site observations indicated the regional and action areas to be located in a predominantly upland agricultural landscape setting with associated depressional wetlands draining north to the River Raisin. Photographs taken during the site assessment are included in Appendix C.

Westshore observed evidence of post harvest corn, soybean and alfalfa crop to be located within the regional upland areas to the north, northwest, south, southeast, southwest, east and west of the action area. An observed depressional area consisting primarily of various juvenile Willow species (*Salix spp.*), Red-Osier Dogwood (*Cornus sericea*), Red Maple (*Acer rubrum*), Reed Canary Grass (*Phalaris arundinacea*), and miscellaneous herbaceous wetland species was located approximately 300 feet to the north and northeast of the action area (Figure 2). This depressional area can be characterized as a depressional, shrub-carr wetland.

General soil observations within the regional areas surrounding the action area ranged from a 10YR 2/1 black muck in the depressional areas, to poorly sorted 5YR 4/3 reddish brown silty sand with trace gravel to one-quarter of an inch in the upland agricultural areas.

A survey of the regional topography indicated a surface water flow to the north and northeast towards the River Raisin. Regional surface water features included an unnamed creek, the River Raisin, Norvell Lake and a depressional farm pond. A regional aerial photograph is included as Appendix D.

- d. **A description of the "action area" for the well and associated surface facilities. This will include dimensions of the affected area, such as the clearing in which the well is located, length of road or pipeline to be built, etc., as well as the extent of disruption of the area. For example, an existing well with no construction plan will be less disruptive**

than a proposed well, and a proposed well in an open, plowed field will be less disruptive than one which requires some clearing of forest.

Westshore observed the project action area to be located entirely within a plowed, upland and open agricultural area. Evidence of post harvest, residual corn and soybean crop was observed in the action area. The observed soil within the action area was a poorly sorted 5YR 4/3 reddish brown silty sand with trace gravel to one-quarter of an inch. The topography of the action area was observed to flow to the north, northwest and northeast.

The action area will be an obtuse westerly extension of the existing Haystead 1-9A HD1 and Haystead 3-9 HD1 oil well pad (Figure 3). The Haystead SWD #9 action area will require minor clearing and leveling of plowed, upland agricultural field. The proposed Haystead SWD #9 well location is approximately 90 feet west of the Haystead 1-9A HD1 wellhead and will require the clearing of approximately 85 feet by 220 feet of open upland plowed agricultural field west from the western edge of the existing well pad and approximately 135 feet to the north and 85 feet to the south from the proposed Haystead SWD #9 injection well.

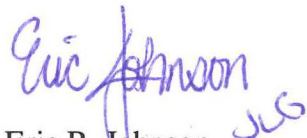
Access to the Haystead SWD #9 action area will be gained via the existing access road that serves the existing Haystead 1-9A HD1 and Haystead 3-9 HD1 well pad (Figure 2). All associated pipeline installation and work will utilize directional boring methods to avoid impact to existing local and regional wetland areas.

In conclusion, the Haystead SWD #9 project will not directly impact endangered, threatened, proposed and/or candidate species or the critical habitats necessary to the existence and propagation of those species listed under the USFWS Section 7. In addition, the Haystead SWD #9 well pad will be constructed prior to the onset of warmer, drier summer days when the Eastern Massasauga has been known to utilize the drier upland areas, prior to the migration of the Indiana Bat to summer roosting habitats, and will be located entirely in an upland, open and plowed agricultural field.

Please do not hesitate to contact West Bay or Westshore with additional questions, comments and/or clarifications.

Sincerely,

WESTSHORE CONSULTING



Eric R. Johnson
Wetland Scientist

ERJ/jlg/323-130

Figure 1 – Site Location Map

Figure 2 – Site Survey Map

Appendix A – US EPA letter dated February 10, 2012

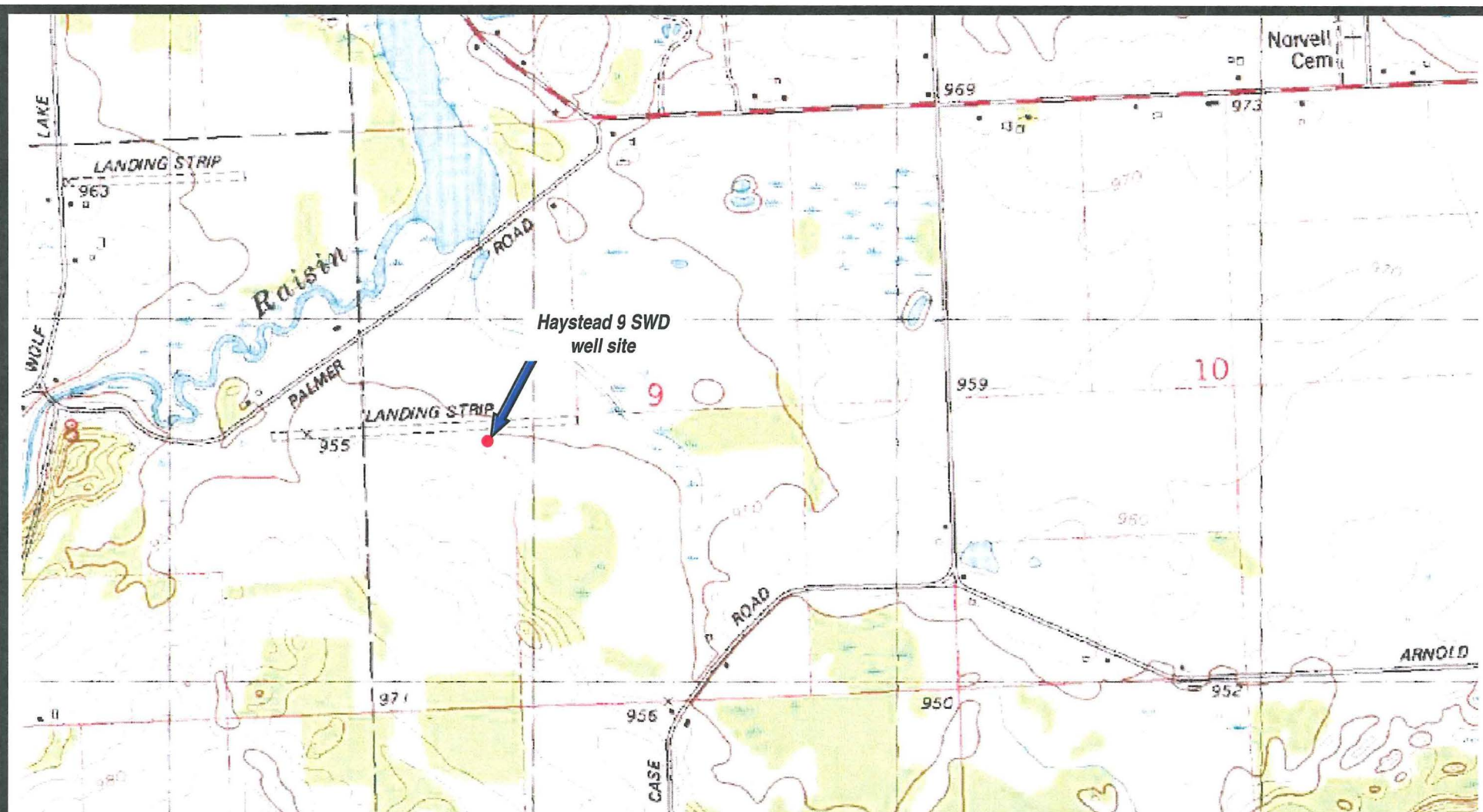
Appendix B – Jackson County Michigan Endangered/Threatened Species

Appendix C – Site Photographs

Appendix D – Aerial Photograph of Action Area

cc: Mr. Tim Baker, West Bay Exploration Co.
Mr. Tim Brock, West Bay Exploration Co.
Mr. Robert Schulz, Westshore Consulting

Figures



TOPOGRAPHIC BASE: UNITED STATES GEOLOGICAL SURVEY, 7.5 MINUTE QUADRANGLE SERIES; NORVELL QUADRANGLE, MICHIGAN 1975; EDITED 1980



www.WestshoreConsulting.com

Muskegon, MI
(231) 777-3447

Grand Haven, MI
(616) 844-1260

Manistee, MI
(231) 920-5818

Client:

West Bay Exploration Company

Site:

Haystead 9 SWD well site, Section 9, T4S, R2E,
Norvell Township, Jackson County, Michigan

SITE LOCATION MAP

Checked: WAV

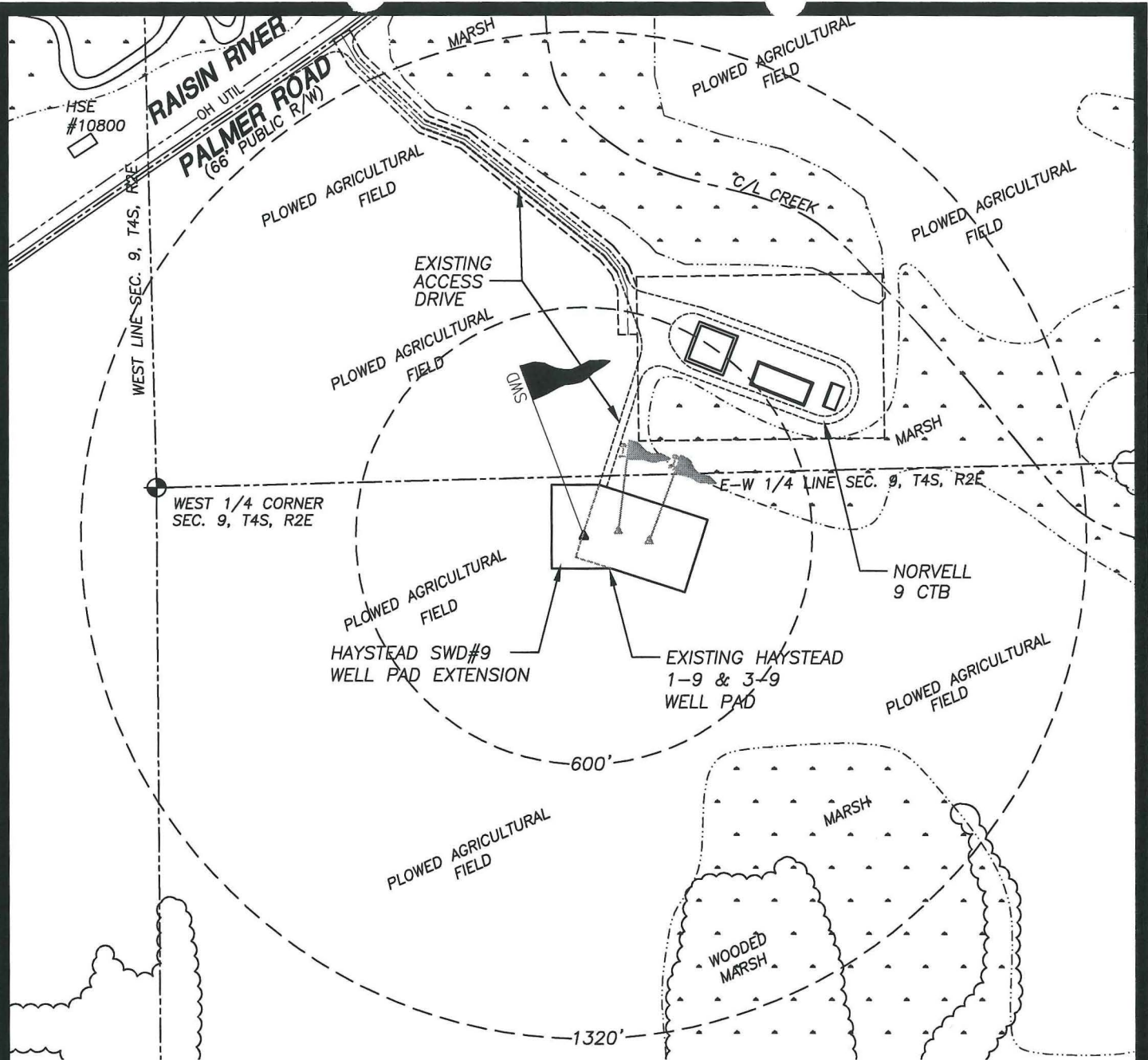
Date: 06/08/11

Drawn by: JLG

Date: 06/08/11

File No.: 323-130

Figure: **1**



LOCATION: 2459' FEET FROM THE
SOUTH LINE AND 1122 FEET FROM
THE WEST LINE OF SECTION 9, T4S,
R2E, NORVELL TOWNSHIP, JACKSON
COUNTY, MICHIGAN.

N14°E 976'
N21°E 761'
N46°E 291'
S32°E 682'

N81°E 91'
N30°E 530'
S86°E 171'

C/L CREEK
EDGE OF MARSH
EDGE OF MARSH
EDGE OF MARSH

HAYSTEAD 1-9/1-9A WELL
NORVELL 9 CTB
HAYSTEAD 3-9 WELL



0 200' 400'
SCALE: 1" = 400'



**WESTSHORE
CONSULTING**
Engineers ■ Scientists ■ Surveyors ■ Planners

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Manistee, MI 49660
(231) 920-5818

**WEST BAY
EXPLORATION COMPANY**
13685 South West Bay Shore Dr.
Traverse City, Mi. 49684

**SURVEY OF THE
HAYSTEAD 9 SWD WELL
LOCATED IN SECTION 9, T4S, R2E,
NORVELL TWP, JACKSON CO.**

Checked: SW
Date: 3/16/11
Drawn by: WAV
Date: 3/16/11
File No.: 323-130
Figure:

2

Appendix A

US EPA letter dated February 10, 2012



FEB 10 2012

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

**77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590**

REPLY TO THE ATTENTION OF:

WU-16J

CERTIFIED MAIL 7009 1680 0000 7644 1025
RETURN RECEIPT REQUESTED

**Timothy Brock
West Bay Exploration Company
13685 South West Bay Shore Drive, Suite 200
Traverse City, Michigan 49684**

**Re: Additional Information Requested for the Haystead SWD #9 injection well, U.S.
Environmental Protection Agency (EPA) Underground Injection Control (UIC)
Permit Application #MI-075-2D-0010**

Dear Mr. Brock,

I have reviewed your permit application for the injection well referenced above. At this time I am unable to complete the processing of the permit application in the absence of the information listed below:

1. A letter from West Bay Exploration Company which authorizes Timothy Brock to sign UIC applications and other related UIC documents.
2. Cementing tickets or similar documentation which indicates the slurry volume of Flowstop and HalCem cement used in the cementing of Haystead 1-9A casings (well in the area of review).
3. In accordance with 40 CFR § 144.4 (c), the U. S. Environmental Protection Agency (EPA) is required to comply with the Endangered Species Act (ESA) when issuing permit decisions. Therefore, when considering a permit application or extension, the UIC Branch must consider the potential impacts from the new or existing injection well to endangered species present in the area. In order to determine whether an injection well will adversely impact endangered and threatened species, the UIC branch must have location-specific ecological information, such as the presence of certain vegetation, soils or surface water bodies. As a result, we are requiring the following information to be submitted in each permit application.
 - a. A list of endangered, threatened, and candidate species in the county in which the well is located. Species are listed by state and county at <http://www.fws.gov/midwest/endangered/section7/sppranges/index.html>. Generally, two or three species are listed in each county (see enclosed example).

- b. A summary of the critical habitat which, if present, may support one of the above-listed species. The web address above includes a brief description of the critical habitat for each species. More detailed information on critical habitat is found at <http://www.fws.gov/midwest/endangered/section7/s7process/lifehistory.html>.
- c. A survey of the surface vegetation, soils, topography and hydrologic features in the area of review in sufficient detail to address the presence or absence of critical habitat for any endangered, threatened, or candidate species. This will include descriptions such as "mature mixed forest", "plowed field" or "stabilized dunes", and may also include specific trees or plants listed as critical to a species.
- d. A description of the "action area" for the well and associated surface facilities. This will include dimensions of the affected area, such as the clearing in which the well is located, length of road or pipeline to be built, etc., as well as the extent of disruption of the area. For example, an existing well with no construction plan will be less disruptive than a proposed well, and a proposed well in an open, plowed field will be less disruptive than one which requires some clearing of forest.

This information must be certified in accordance with 40 CFR § 144.32(d). EPA recommends that this information be gathered in consultation with an ecologist, botanist, or other environmental professional.

If critical habitat is present, the permit is not automatically denied. EPA, in conjunction with the U.S. Fish and Wildlife Service, will examine more detailed information to determine the presence of endangered species in the area and the likelihood of negative impact to the species. Past experience has shown that very few projects pose any disturbance to endangered species in Region 5, and we do not expect this to change. We appreciate your cooperation in protecting these important species from endangerment and extinction.

I will be unable to proceed with the processing of your application until this information is received. Please compile and submit the requested information upon your receipt of this letter. If you have any questions regarding the requested information, feel free to call me at (312) 886-0263.

Sincerely yours,



Timothy Elkins, Environmental Scientist
Underground Injection Control

Enclosure

cc: Rick Henderson, Michigan DEQ

Appendix B

Jackson County Michigan Endangered/Threatened Species

Jackson	<u>Indiana bat</u> (<i>Myotis sodalis</i>)	Endangered	Summer habitat includes small to medium river and stream corridors with well developed riparian woods; woodlots within 1 to 3 miles of small to medium rivers and streams; and upland forests. Caves and mines as hibernacula.
	<u>Eastern massasauga</u> (<i>Sistrurus catenatus</i>)	Candidate	
	<u>Mitchell's satyr butterfly</u> (<i>Neonympha mitchellii mitchellii</i>)	Endangered	Fens; wetlands characterized by calcareous soils which are fed by carbonate-rich water from seeps and springs
	* <u>Poweshiek skipperling</u> (<i>Oarisma poweshiek</i>)	Candidate	Wet prairie and fens

Appendix C
Site Photographs



Looking North from Action Area

1



Looking South from Action Area

2



Looking West from Action Area

3



Looking Southeast from Action Area

4

Site: Haystead SWD #9 injection well site, Section 9, T4S, R2E, Norvell Township, Jackson County, Michigan

File No.: 323-130

Photos By: E. Johnson

Client: West Bay Exploration Company

Date: 02/23/12

Appendix D

Aerial Photograph of Action Area



N

VIEW OBTAINED FROM: Microsoft Bing Maps online, obtained on March 19, 2012



www.WestshoreConsulting.com

Muskegon, MI
(231) 777-3447

Grand Haven, MI
(616) 844-1260

Manistee, MI
(231) 920-5818

Client:

West Bay Exploration Company

Site:

Haystead 9 SWD well site,
Section 9, T4S, R2E, Norvell Township,
Jackson County, Michigan

**RECENT
AERIAL
PHOTOGRAPH**

Checked: RLS

Date: 03/19/12

Drawn by: JLG

Date: 03/19/12

File No.: 323-130

Appendix: **D**

RECEIVED

MAR 20 2012

UIC BRANCH

EPA, REGION 5